

Technical data sheet

Throughbeam photoelectric sensor receiver

Part no.: 50148181

LE55C/LG-200-M12



For illustration purposes only

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Technical data

Basic data

| | |
|---------------------|-----------------------|
| Series | 55C |
| Operating principle | Throughbeam principle |
| Device type | Receiver |

Special version

| | |
|-----------------|------------------|
| Special version | Wash-Down design |
|-----------------|------------------|

Optical data

| | |
|-----------------|-----------------|
| Operating range | see transmitter |
|-----------------|-----------------|

Electrical data

| | |
|--------------------|---|
| Protective circuit | Polarity reversal protection Short circuit protected |
|--------------------|---|

Performance data

| | |
|----------------------|--|
| Supply voltage U_B | 10 ... 30 V, DC, Incl. residual ripple |
| Residual ripple | 0 ... 15 %, From U_B |
| Open-circuit current | 0 ... 15 mA |

Outputs

| | |
|-------------------------------------|------------|
| Number of digital switching outputs | 2 Piece(s) |
|-------------------------------------|------------|

Switching outputs

| | |
|-------------------------|---|
| Type | Digital switching output |
| Voltage type | DC |
| Switching current, max. | 100 mA |
| Switching voltage | high: $\geq(U_B - 2V)$ low: $\leq 2 V$ |

Switching output 1

| | |
|---------------------|--|
| Assignment | Connection 1, pin 4 |
| Switching element | Transistor, Push-pull |
| Switching principle | IO-Link / light switching (PNP)/dark switching (NPN) |

Switching output 2

| | |
|---------------------|--|
| Assignment | Connection 1, pin 2 |
| Switching element | Transistor, Push-pull |
| Switching principle | Dark switching (PNP)/light switching (NPN) |

Time behavior

| | |
|---------------------|----------|
| Switching frequency | 1,000 Hz |
| Response time | 0.5 ms |
| Readiness delay | 300 ms |

Interface

| | |
|------------------|----------------------|
| Type | IO-Link |
| IO-Link | |
| COM mode | COM2 |
| Profile | Smart sensor profile |
| Min. cycle time | COM2 = 2.3 ms |
| Frame type | 2.1 |
| Specification | V1.1 |
| Device ID | 6019 |
| SIO-mode support | Yes |

Connection

| | |
|-----------------------|------------|
| Number of connections | 1 Piece(s) |
|-----------------------|------------|

Connection 1

| | |
|----------------------|---|
| Function | Signal IN Signal OUT Voltage supply |
| Type of connection | Cable with connector |
| Cable length | 200 mm |
| Sheathing material | PVC |
| Cable color | Black |
| Number of conductors | 4 -wire |
| Wire cross section | 0.2 mm ² |
| Thread size | M12 |
| Type | Male |
| Material | Stainless steel |
| No. of pins | 4 -pin |
| Encoding | A-coded |

Mechanical data

| | |
|---------------------------------|--|
| Dimension (W x H x L) | 14 mm x 35.4 mm x 25 mm |
| Housing material | Stainless steel |
| Material of operational control | Plastic (POM Hostaform C9021, copoly-ester Tritan TX1001), non-diffusive |
| Housing roughness | Ra $\leq 0,8$, Typical value for the stainless steel housing |
| Stainless steel housing | AISI 316L, DIN X2CrNiMo17132, W. No1.4404 |
| Lens cover material | Plastic (PMMA+) with scratch-resistant Indium protective coating |
| Net weight | 59 g |
| Housing color | Silver |
| Type of fastening | Through-hole mounting Via optional mounting device |
| Compatibility of materials | CleanProof+ ECOLAB Johnson Diversey |

Operation and display

| | |
|-----------------|------------|
| Type of display | LED |
| Number of LEDs | 2 Piece(s) |

Environmental data

| | |
|--------------------------------|--------------------------------------|
| Ambient temperature, operation | -40 ... 60 °C, (70 °C ≤ 15 min) |
| Ambient temperature, storage | -40 ... 70 °C |

Certifications

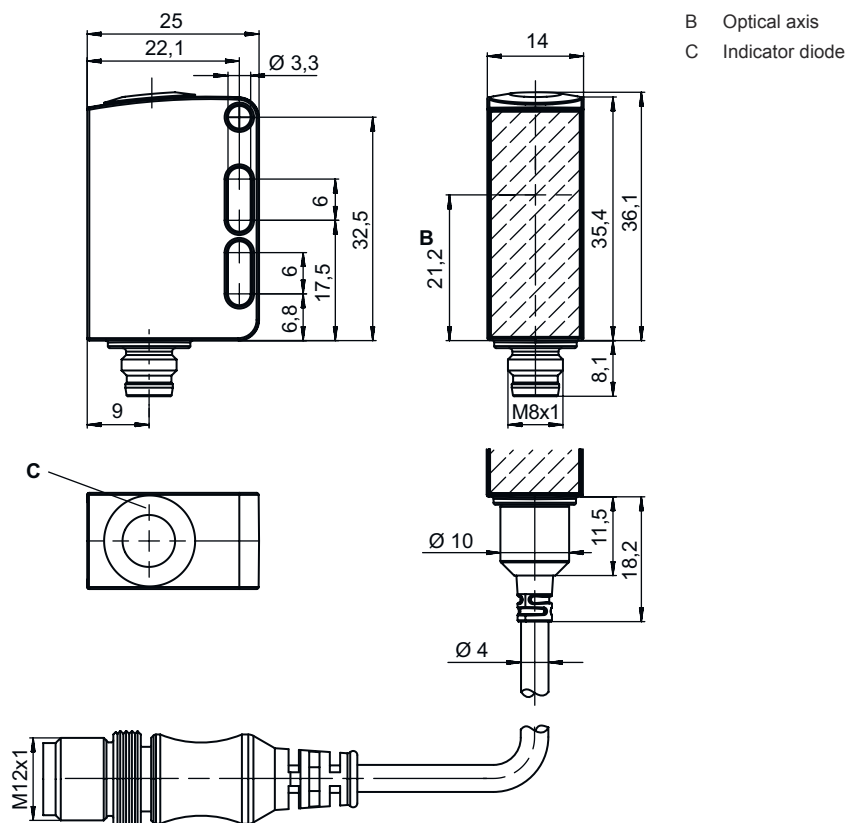
| | |
|----------------------|--------------------------|
| Degree of protection | IP 67 IP 68 IP 69K |
| Protection class | III |
| Approvals | c UL US |
| Standards applied | IEC 60947-5-2 |

Technical data

| | |
|-----------------------|----------|
| Customs tariff number | 85365019 |
| ECLASS 5.1.4 | 27270901 |
| ECLASS 8.0 | 27270901 |
| ECLASS 9.0 | 27270901 |
| ECLASS 10.0 | 27270901 |
| ECLASS 11.0 | 27270901 |
| ECLASS 12.0 | 27270901 |
| ECLASS 13.0 | 27270901 |
| ECLASS 14.0 | 27270901 |
| ECLASS 15.0 | 27270901 |
| ECLASS 16.0 | 27270901 |
| ETIM 5.0 | EC002716 |
| ETIM 6.0 | EC002716 |
| ETIM 7.0 | EC002716 |
| ETIM 8.0 | EC002716 |
| ETIM 9.0 | EC002716 |
| ETIM 10.0 | EC002716 |

Dimensioned drawings

All dimensions in millimeters



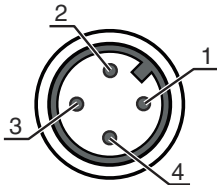
Electrical connection

Connection 1

| | |
|----------------------|----------------------|
| Function | Signal IN |
| | Signal OUT |
| | Voltage supply |
| | |
| Type of connection | Cable with connector |
| Cable length | 200 mm |
| Sheathing material | PVC |
| Cable color | Black |
| Number of conductors | 4 -wire |
| Wire cross section | 0.2 mm² |
| Thread size | M12 |
| Type | Male |
| Material | Stainless steel |
| No. of pins | 4 -pin |
| Encoding | A-coded |

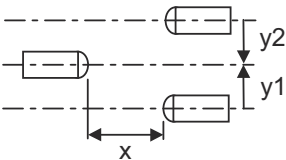
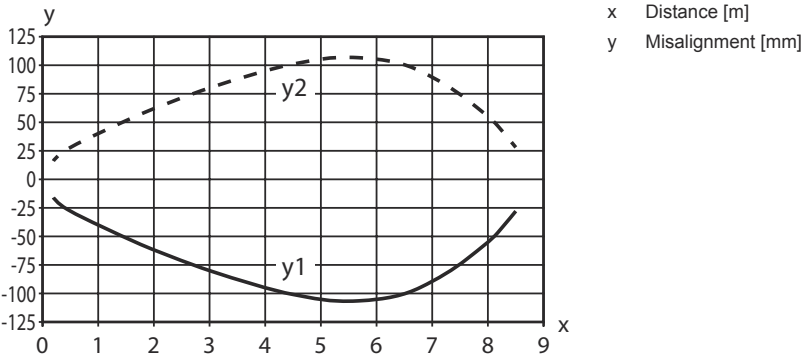
Pin Pin assignment

| | |
|---|-----------------|
| 1 | V+ |
| 2 | OUT 2 |
| 3 | GND |
| 4 | IO-Link / OUT 1 |



Diagrams


Typ. response behavior



Operation and display

| LED | Display | Meaning |
|-----|--------------------------|--------------------------------------|
| 1 | Green, continuous light | Operational readiness |
| 2 | Yellow, continuous light | Light path free |
| | Yellow, flashing | Light path free, no function reserve |

Suitable transmitters

| | Part no. | Designation | Operating range Operating range limit | Description |
|---|----------|------------------|---|--|
|  | 50148178 | LS55C/8X-200-M12 | 0.05 ... 8.5 m 0.05 ... 10 m | Special version: Activation input, Wash-Down design Operating range limit: 0.05 ... 10 m Light source: LED, Red Supply voltage: DC Connection: Cable with connector, 200 mm, M12, Stainless steel, 4 -wire, 4 -pin |

Part number code

Part designation: **AAA55C d EE-f.GGGG H/i J-K**

| | |
|---------------|---|
| AAA55C | Operating principle / construction HT55C: Diffuse reflection sensor with background suppression LS55C: Throughbeam photoelectric sensor transmitter LE55C: Throughbeam photoelectric sensor receiver PRK55C: Retro-reflective photoelectric sensor with polarization filter ODT55C: Distance diffuse sensor with background suppression |
| d | Light type n/a: red light I: infrared light |
| EE | Light source n/a: LED L1: laser class 1 L2: laser class 2 |
| f | Preset range (optional) n/a: operating range acc. to data sheet xxxF: Preset range [mm] |
| GGGG | Equipment n/a: standard A: Autocollimation principle (single lens) for positioning tasks F: Permanently set range H2O: Detection of aqueous liquids Fill-level monitoring S: small light spot T: autocollimation principle (single lens) for highly transparent bottles without tracking TT: autocollimation principle (single lens) for highly transparent bottles with tracking V: V-optics XL: Extra long light spot |
| H | Operating range adjustment n/a with HT: range adjustable via 8-turn potentiometer n/a with retro-reflective photoelectric sensors (PRK): operating range not adjustable 1: 270° potentiometer 3: teach-in via button |
| i | Switching output/function OUT 1/IN: Pin 4 or black conductor 2: NPN transistor output, light switching N: NPN transistor output, dark switching 4: PNP transistor output, light switching P: PNP transistor output, dark switching 6: push-pull switching output, PNP light switching, NPN dark switching G: Push-pull switching output, PNP dark switching, NPN light switching L: IO-Link interface (SIO mode: PNP light switching, NPN dark switching) 8: activation input (activation with high signal) X: pin not used 1: IO-Link / light switching (NPN) / dark switching (PNP) 7: Input for sensitivity adjustment |
| J | Switching output / function OUT 2/IN: pin 2 or white conductor 2: NPN transistor output, light switching N: NPN transistor output, dark switching 4: PNP transistor output, light switching P: PNP transistor output, dark switching 6: push-pull switching output, PNP light switching, NPN dark switching G: Push-pull switching output, PNP dark switching, NPN light switching T: teach-in via cable X: pin not used 8: activation input (activation with high signal) 9: deactivation input (deactivation with high signal) 7: Input for sensitivity adjustment |

Part number code

| | |
|---|---|
| K | Electrical connection |
| | n/a: cable, standard length 2000 mm, 4-wire |
| | 5000: cable, standard length 5000 mm, 4-wire |
| | M8: M8 connector, 4-pin (plug) |
| | M8.3: M8 connector, 3-pin (plug) |
| | 200-M12: cable, length 200 mm with M12 connector, 4-pin, axial (plug) |

Note



A list with all available device types can be found on the Leuze website at www.leuze.com.

Notes



Observe intended use!



- This product is not a safety sensor and is not intended as personnel protection.
- The product may only be put into operation by competent persons.
- Only use the product in accordance with its intended use.

For UL applications:




- For UL applications, use is only permitted in Class 2 circuits in accordance with the NEC (National Electric Code).
- These proximity switches shall be used with UL Listed Cable assemblies rated 30V, 0.5A min, in the field installation, or equivalent (categories: CYJV/ CYJV7 or PVVA/PVVA7)

Further information

- Light source: Average life expectancy 100,000 h at an ambient temperature of 25 °C
- Response time: For short decay times, an ohmic load of approx. 5kOhm is recommended
- Sum of the output currents for both outputs, 50 mA for ambient temperatures > 40 °C
- Permissible operating temperature range during IO-Link operation: -10 °C to +60 °C
- Ambient temperature, operation: +70 °C permissible only briefly (≤ 15min)
- IP 69K only in combination with connector


Accessories

Connection technology - Connection unit


| | Part no. | Designation | Article | Description |
|--|----------|-----------------------|----------------|---|
|  | 50144900 | MD 798i-11-82/L5-2222 | IO-Link master | Current consumption, max.: 11,000 mA Interface: IO-Link, Automatic protocol detection, EtherNet IP, Modbus TCP, PROFINET Connections: 12 Piece(s) Sensor connections: 8 Piece(s) Degree of protection: IP 67, IP 65, IP 69K |

Accessories


Connection technology - Connection cables

| | Part no. | Designation | Article | Description |
|---|----------|------------------------|------------------|--|
|  | 50130657 | KD U-M12-4A-P1-050 | Connection cable | Application: Oil and lubricant resistant Connection 1: Connector, M12, Axial, Female, A-coded, 4 -pin Connector, LED: No Connection 2: Open end Shielded: No Cable length: 5,000 mm Sheathing material: PUR |
| | 50148350 | KD U-M12-4A-T0-050 F+B | Connection cable | Application: Chemical resistant, Hygienic and wet areas Connection 1: Connector, M12, Axial, Female, A-coded, 4 -pin Connector, LED: No Connection 2: Open end Shielded: No Cable length: 5,000 mm Sheathing material: TPE |

Mounting technology - Mounting brackets

| | Part no. | Designation | Article | Description |
|--|----------|-------------|------------------|---|
|  | 50118542 | BT 200M.5 | Mounting bracket | Design of mounting device: Angle, L-shape Fastening, at system: Through-hole mounting Mounting bracket, at device: Screw type, Suited for M3 screws Type of mounting device: Adjustable Material: Stainless steel |
| | 50040269 | BT 25 | Mounting device | Design of mounting device: Angle, L-shape Fastening, at system: Through-hole mounting Mounting bracket, at device: Screw type Type of mounting device: Rigid Material: Metal |

Mounting technology - Rod mounts

| | Part no. | Designation | Article | Description |
|---|----------|----------------|-----------------|---|
|  | 50117255 | BTU 200M-D12 | Mounting system | Contains: 2x M3 x 16 screw, 2 M3 x 20 screws, 2x position washers Design of mounting device: Mounting system Fastening, at system: For 12 mm rod, Sheet-metal mounting Mounting bracket, at device: Screw type, Suited for M3 screws Type of mounting device: Clampable, Adjustable, Turning, 360° Material: Metal |
| | 50120426 | BTU 200M.5-D12 | Mounting system | Contains: 2x M3 x 18 screw, 2x M3 mounting nut, 2x position washers Design of mounting device: Mounting system Fastening, at system: For 12 mm rod Mounting bracket, at device: Screw type, Suited for M3 screws Type of mounting device: Turning, 360°, Adjustable, Clampable Material: Stainless steel |

Accessories

| Note | |
|--|--|
|  | <p>A list with all available accessories can be found on the Leuze website in the Download tab of the article detailed page.</p> |